Photo source: Landsat-8 image courtesy of the U.S. Geological Survey

WFP World Food Programme

SAVING LIVES CHANGING LIVES

Nigeria

Satellite imagery analysis 2023

Cropland change detection analysis in hard-to-reach areas

Introduction

Nigeria is faced with different types of security incidents, almost in every region of the country, including attacks by armed groups and clashes between herders and farmers. According to ACLED[1], security incidents doubles between 2019 and 2022. During 2023, the highest fatalities were reported in Borno state (as of October 2023). The scale of significant insecurity expands to Benue, Niger, Zamfara, Katsina, Plateau, and Sokoto states and in lesser scale across the rest of the states.

The analysis in 2023 covers hard-to-reach areas in 8 states: Borno, Yobe, Adamawa, Kaduna, Katsina, Sokoto, Zamfara, and Niger states. This covers around 63 000 villages in 96 LGAs. The analysis aims at supporting food security interventions.

This summary note presents the analysis results and overview of the post-harvest situation in 2023. The results provided a preliminary recommendation for Cadre Harmonisé (CH) to be considered as indicative in targeting activities for the emergency response during the 2024 lean season.

Methodology

Cropland change in conflict zones is detected by measuring the degree of change through calculating the Normalized Difference Vegetation Index (NDVI), which is a vegetation index commonly used in remote sensing. Satellite images were acquired for the main agricultural season (i.e. between 15th June and 15th October) for the current year, the previous year, and a reference year before the start of the conflict in the analysed areas i.e. year 2016. A model is used to automatically classify the NDVI values into 14 categories during the agricultural season (from the time of the end of land preparation and sowing until the shoots and start of harvest) for each image, eliminate the non-cropland areas and then automatically compare the NDVI to identify the change whether it is an increase, no change, or decrease of cropland per each locality/village. Accordingly, localities were automatically classified into 7 classes as follows.

- Severe decrease: >50% estimated area loss.
- Medium decrease: 25%-50% estimated area loss.
- Slight decrease: <25% estimated area loss.
- Slight increase: <25% estimated area gain.
- Medium increase: 25%-50% estimated area gain.
- Significant increase: >50% estimated area gain.
- No change areas are represented in grey colour, which could also represent built areas.

The above classes are the result of consultation with partners to standardise the representation across the analysis areas and regionally.

The advantage of this automated methodology is that it provides timely, cost-efficient, reliable and evidence-based assessment of conflict impacts on agriculture in hard-to-reach areas, where field data is limited. It allows obtaining results for a large coverage of a country within few days and allows for iterating the results by re-running the automated model timely. The

European Commission

[1] *Armed Conflict Location and Event Data Project: https://acleddata.com/.*

level of details of the analysis can directly inform targeting vulnerabilities at the national or regional levels, needs assessments and response planning at the locality level. It also supports prioritizing emergency funds and response through an evidence-based analysis result.

Analysis results

All analysed areas in the 8 states were generally significantly affected by a cropland decrease when compared to reference year i.e. 2016. Although there is a trend towards cropland decrease in comparison to last year as well, medium cropland increases were observed in Adamawa (78%), Kaduna (44%), Niger (63%), Yobe (32%), and to a lesser extend in other states.

I. North-West region

(Sokoto, Zamfara and Katsina states)

Sokoto, Zamfara and Katsina states are located in the northwest of Nigeria and bordered by Niger in the north. Their population is predominantly engaged in agricultural activities. Insecurity has resulted in displacement of farming communities, disruption of agricultural activities, and loss of crops and livestock. In Sokoto, 4,225 villages were analysed, 10,255 in Zamfara, and 10,726 in Katsina.

A cropland increase in 5% of villages was observed in Sokoto state in comparison to the reference year and a cropland decrease in 90% of villages. All analysed villages in Isa and Silame LGAs recorded a cropland decrease in comparison to the reference year. The cropland dynamics improved slightly in 2023 compared to last year, when 29% of villages recorded a cropland increase but still 70% recorded a cropland decrease. The highest cropland increase was recorded in Goronyo, Gudu, Illela with an increase in 43%, 45%, and 49% of villages respectively. Rabah is the most affected LGA by a cropland decrease in 92% of villages, followed by Isa (91%), Gada (87%) and Silame (81%).

Almost all villages in Zamfara state recorded a cropland decrease compared to the reference year and none recorded a cropland increase. In comparison to last year, all analysed villages in Birnin Magaji-Kiyaw, Kaura Namoda, Zurmi LGAs recorded a cropland decrease. Bakura, Bukkuyum, Gummi LGAs recorded a cropland increase for 27%, 32%, and 79% of villages respectively.

In comparison to the reference year, Katsina State is the most affected by cropland decrease, with almost all analysed villages and LGAs recording a cropland decrease, and none recording an increase. However, a cropland increase was observed in 25% of villages in comparison to last year, and a cropland decrease in 71% of villages. **Katsina state is the most affected by cropland decrease** in comparison to last year overall, with 71% of its villages recording a decrease.

II. North-Central region

(Kaduna and Niger states)

Eight LGAs were analysed in Kaduna covering around 10,000 villages/communes, all of which experienced significant cropland decrease in comparison to reference year. The analysis showed a slight improvement in comparison to last year particularly in Kaura and Zangon Kataf where 85% and 87% of villages showed a cropland increase respectively. A cropland decrease was observed in 78% and 84% of villages in Giwa and Ikara LGAs respectively.

The cropland decrease in Niger state was observed in 74% to 100% of villages in comparison to reference year, and in none to 73% of villages in comparison to last year. All the villages in Rafi and Wushishi LGAs showed a cropland decrease in comparison to reference year. A cropland increase was observed in Magama, Mashegu, Munya, Shiroro LGAs in 20%, 26%, 16% and 25% of villages respectively. While in comparison to last year, the strongest cropland decrease was observed in Munya, Paikoro, and Lapai LGAs in 73%, 70%, and 66% of their villages respectively. However, all LGAs showed a medium cropland increase with variant percentages; particularly in Gbako, and Kontagora where all villages showed a cropland increase in comparison to last year.

III. North-East region

(Yobe, Borno and Adamawa states)

Yobe, Borno and Adamawa states are located in the North-East of Nigeria. The 3 states are bordered by Niger in the north, Cameron to the south, and both Cameron and Chad to the east respectively.

Borno state witnessed a significant number of security incidents in 2023 (as of October) according to ACLED, which could have contributed to the cropland decrease in 69% of its villages in comparison to last year. The strongest cropland decrease was observed in Magumeri, Marte, Mobbar, Monguno, Ngala, Gubio, and Abadam where 91%, 96%, 100%, 98%, 90%, 100%, 99% of villages respectively recorded a cropland decrease this year in comparison to last year.

In comparison to the reference year, Borno recorded a decrease in 93% of its villages. All villages in Askira Uba, Dikwa, Nganzai and Mafa, and 99% of villages in Monguno and Gubio, recorded a cropland decrease. All other LGAs recorded a significant decrease with Abadam LGA the least, which recorded a decrease in 63% of its villages and an increase in 37%.

Yobe state recorded an increase in 32% of its villages in 2023. The most increase was recorded in Gujba, Gulani, and Tarmuwa LGAs where 84%, 94%, and 41% of village recorded an increase respectively in comparison to last year. However, Bursari, Geidam, and Yunusari LGAs recorded the highest decrease in 84%, 98%, and 82% of villages respectively. In comparison to the reference year, all villages in Bursari

recorded a cropland decrease, and Gujba recorded a decrease in 99% of villages. All other LGAs recorded a cropland decrease between 98% and 88% of villages.

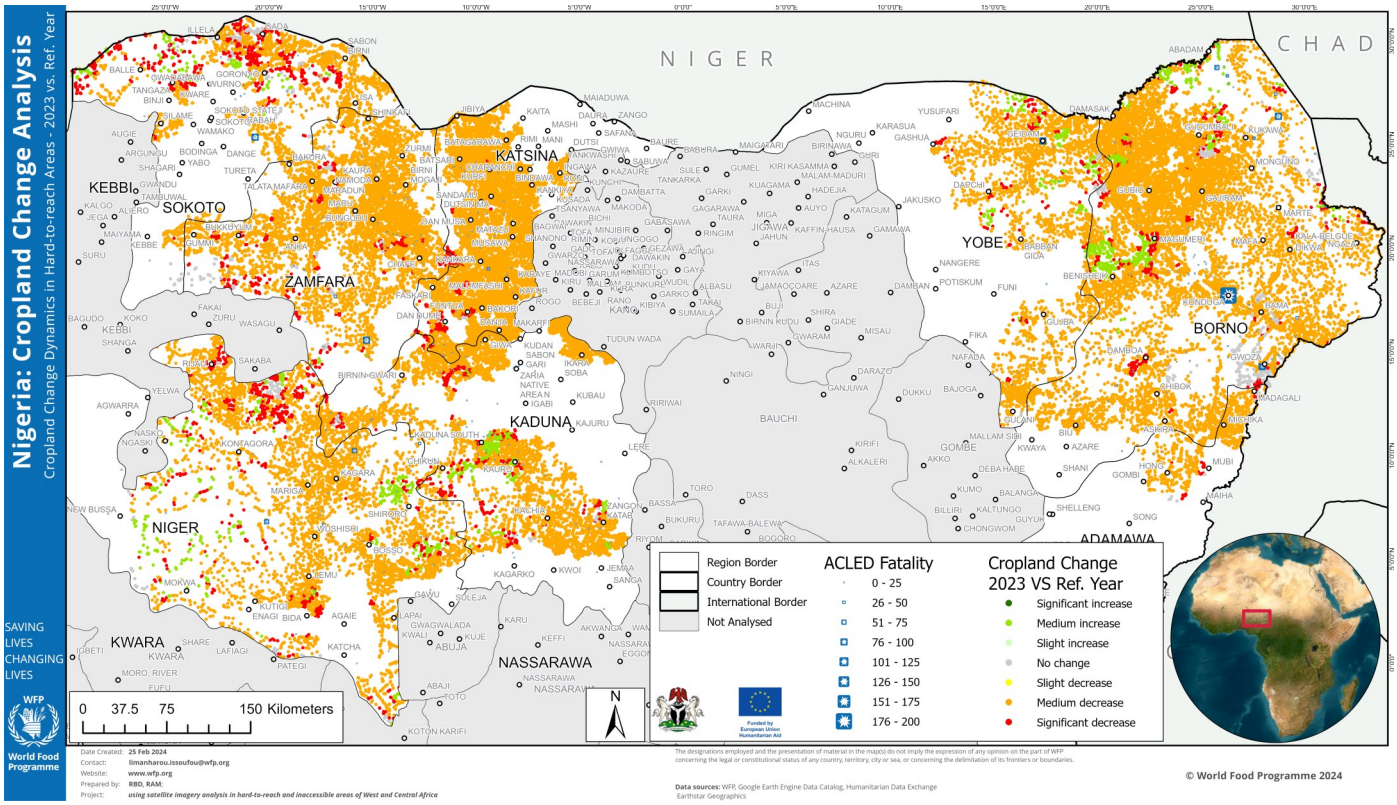
Most of the analysed villages in Adamawa state recorded a significant cropland decrease in comparison to the reference year. No cropland increase was recorded. Hong, Madagalim and Michika LGAs recorded a decrease in 99%, 98% and 100% of villages respectively. In comparison to last year, 78% of villages recorded a cropland increase. Hong, Madagalim and Michika LGAs recorded an increase in 75%, 90% and 74% of villages respectively, and a decrease in 25%, 2%, and 8% respectively.

Conclusion

The analysed areas witnessed a significant number of security incidents in 2023. Security issues resulted in population displacement, and loss of cropland. In comparison to the reference year, approximately **99% of villages in Katsina, Adamawa, and Zamfara states recorded significant cropland decrease**. Over 90% of villages in Borno, Niger, and Yobe recorded a cropland decrease.

In comparison to last year, approximately 70% of villages in Katsina, Sokoto, and Borno states recorded significant cropland decrease. Over 58% of villages in Yobe and Zamfara recorded a cropland decrease.

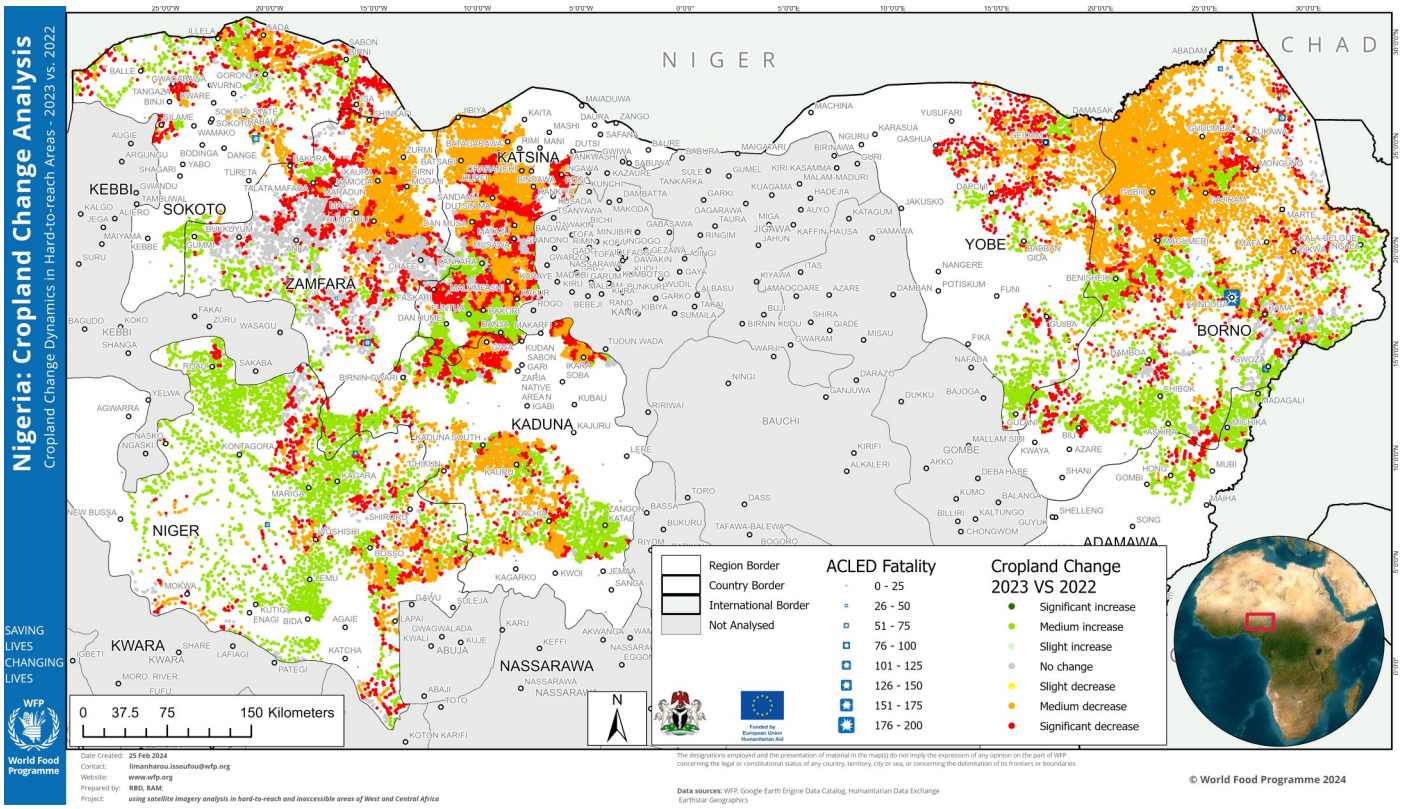
The analysis support targeting and identifying affected communities by cropland decrease, which is vital for directing resources and humanitarian response.



Recommendations

The recommendations include the following.

1. The analysis results could benefit from field validation and triangulation with field data collection if the current security situation allows for it.
2. Use the detailed list of localities that are most affected for targeting to ensure that the needs of vulnerable communities are addressed during the lean season.
3. Use the analysis results to inform Cadre Harmonisé (CH) analysis to provide a comprehensive view of the food security situation in the analysed areas.
4. Government agencies and NGOs should work together to support sustainable agricultural practices in regions showing significant cropland deterioration e.g. provision of seeds, and training on sustainable farming methods.
5. Continuous monitoring and analysing the cropland conditions and its impact on population, to provide updated information to support strategies and emergency response and preparedness.



Recommendations for Cadre Harmonisé

It is recommended to use this analysis to inform the Cadre Harmonisé (CH) specifically for the following two components.

Availability: As the analysis of crop dynamics is an analysis of vegetation indices, the data produced can inform the analysis of contributing factors under the availability component, in accordance with the provisions of the Cadre Harmonise Manual. If the share of the population affected by a decrease (resp. by an increase) of the area cultivated is larger than 20%, it is likely that the area aggregated food availability is impacted accordingly.

Hazards & Vulnerability: Where a decrease in cultivated area is associated with total abandonment of villages and cultivated fields and/or violent events (based on ACLED data), the information generated can also inform the analysis of contributing factors under the Hazards & Vulnerability component.

As a first step, the proportion of villages/localities that fall into each category of cropland change (no change, slight decrease, medium decrease etc.) is identified. Then, this is translated into proportion of affected population, based on the estimated population by locality. This ensures that changes are not biased, e.g. if the most affected localities are the least populated. The proportion of population by cropland change class is what is used to inform the CH recommendations.

To facilitate the interpretation of the results of the analysis, thresholding is proposed. It is important to note that consultations on the thresholding of the crop dynamics analysis are still ongoing at the level of the CH Technical Committee. The recommendations below are therefore to be considered as preliminary and indicative.

For the **Availability** component, the overall positive or negative change (pre-crisis versus present) at locality level is used, determined from the difference between medium-significant increases and decreases ratios, both in terms of localities and populations:

- If one of the absolute positive/negative changes is between 5% and 10%: slight positive/negative impact.
- If one of the absolute positive/negative changes is between 10% and 20%: medium positive/negative impact.
- If one of the absolute positive/negative changes is greater than 20%: strong positive/negative impact.

For the **Hazards & Vulnerability** component, thresholding takes into account only negative changes observed over the past year. The following thresholds were applied:

- If the negative change is between 5% and 10%: slight negative impact.
- If the negative change is between 10% and 20%: medium negative impact.
- If the negative change is greater than 20%: strong negative impact.

The following table shows the detailed cropland results in comparison to last year and the preliminary recommendations for CH to be considered as indicative.

State	LGA	Percentage of Significant increase	Percentage of Medium increase	Percentage of slight increase	Percentage of No change	Percentage of slight decrease	Percentage of Medium decrease	Percentage of Significant decrease	total analysed localities	Impacts of short-term negative changes (2023 vs 2022) on the Hazards & Vulnerability dimension
Adamawa		**0**	**78**	**0**	**9**	**0**	**1**	**12**	**1,395**	
Adamawa	Hong	0	75	0	0	0	3	22	543	Strong negative impact
	Madagali	0	90	0	8	0	0	2	325	No significant impact
	Michika	0	74	0	18	0	0	8	527	Slight negative impact
Borno		0	**28**	0	**3**	0	**52**	**17**	**16,589**	
Borno	Abadam	0	1	0	0	0	94	5	431	Strong negative impact
	Askira Uba	0	60	0	4	0	6	29	587	Strong negative impact
	Bama	0	36	0	14	0	16	33	809	Strong negative impact
	Biu	0	71	0	1	0	0	28	973	Strong negative impact
	Chibok	0	97	0	0	0	0	3	330	No significant impact
	Damboa	0	57	0	16	0	3	23	566	Strong negative impact
	Dikwa	0	11	0	3	0	41	46	208	Strong negative impact
	Gubio	0	0	0	0	0	96	4	1,857	Strong negative impact
	Guzamala	0	11	0	1	0	68	20	1,245	Strong negative impact
	Gwoza	0	69	0	16	0	1	13	865	Medium negative impact
	Kaga	0	62	0	0	0	16	22	852	Strong negative impact
	Kala Balge	0	54	0	2	0	12	32	299	Strong negative impact
	Konduga	0	55	0	1	0	26	19	1,254	Strong negative impact
	Kukawa	0	1	0	1	0	71	27	606	Strong negative impact
	Mafa	0	32	0	1	0	58	8	488	Strong negative impact
	Magumeri	0	9	0	1	0	76	15	1,784	Strong negative impact
	Marte	0	0	0	4	0	76	20	221	Strong negative impact
	Mobbar	0	0	0	0	0	93	7	1,403	Strong negative impact
	Monguno	0	1	0	1	0	88	10	380	Strong negative impact
	Ngala	0	2	0	8	0	57	33	279	Strong negative impact
	Nganzai	0	14	0	1	0	69	15	1,152	Strong negative impact
Kaduna		0	**44**	0	**1**	0	**32**	**22**	**9,674**	
Kaduna	Birnin Gwari	0	65	0	2	0	9	24	1,480	Strong negative impact
	Chikun	0	33	0	0	0	46	21	2,340	Strong negative impact
	Giwa	0	20	0	2	0	43	35	1,241	Strong negative impact
	Ikara	0	9	0	7	0	52	32	989	Strong negative impact
	Kachia	0	36	0	0	0	45	19	1,139	Strong negative impact
	Kajuru	0	33	0	0	0	46	22	600	Strong negative impact
	Kaura	0	85	0	0	0	0	15	923	Medium negative impact
	Zangon Kataf	0	87	0	1	0	7	5	962	Medium negative impact
Katsina		0	**25**	0	**5**	0	**39**	**31**	**10,837**	
Katsina	Bakori	0	37	0	11	0	18	34	976	Strong negative impact
	Batagarawa	0	0	0	0	0	87	13	340	Strong negative impact
	Batsari	0	0	0	0	0	98	2	559	Strong negative impact
	Charanchi	0	0	0	0	0	94	6	371	Strong negative impact
	Dan Musa	0	0	0	14	0	34	52	364	Strong negative impact
	Danja	0	76	0	0	0	0	24	573	Strong negative impact
	Dutsin Ma	0	0	0	1	0	59	40	484	Strong negative impact
	Faskari	0	21	0	14	0	7	58	706	Medium negative impact
	Funtua	0	81	0	0	0	8	11	1,002	Strong negative impact
	Ingawa	0	1	0	0	0	29	70	391	Strong negative impact
	Jibia	0	1	0	0	0	98	0	436	Strong negative impact
	Kafur	0	44	0	0	0	28	29	603	Strong negative impact
	Kankara	0	22	0	11	0	41	26	714	Strong negative impact
	Kankia	0	0	0	3	0	51	47	588	Strong negative impact
	Kurfi	0	0	0	6	0	51	43	358	Strong negative impact
	Malumfashi	0	3	0	2	0	35	59	500	Strong negative impact
	Matazu	0	0	0	0	0	63	37	329	Strong negative impact
	Musawa	0	3	0	22	0	34	40	491	Strong negative impact
	Sabuwa	0	68	0	2	0	9	21	664	Strong negative impact
	Safana	0	0	0	1	0	68	32	388	Strong negative impact

State	LGA	Percentage of Significant increase	Percentage of Medium increase	Percentage of slight increase	Percentage of No change	Percentage of slight decrease	Percentage of Medium decrease	Percentage of Significant decrease	total analysed localities	Impacts of short-term negative changes (2023 vs 2022) on the Hazards & Vulnerability dimension
Niger		0	**63**	0	**3**	0	**16**	**18**	**6,607**	
Niger	Bosso	0	74	0	1	0	12	14	175	Strong negative impact
	Gbako	0	100	0	0	0	0	0	407	No significant impact
	Kontagora	0	100	0	0	0	0	0	204	No significant impact
	Lapai	0	29	0	4	0	27	39	709	Strong negative impact
	Lavun	0	93	0	3	0	2	3	231	No significant impact
	Magama	0	98	0	0	0	0	2	226	No significant impact
	Mariga	0	64	0	9	0	6	21	1,279	Strong negative impact
	Mashegu	0	85	0	0	0	10	5	246	Medium negative impact
	Mokwa	0	43	0	17	0	18	21	196	Strong negative impact
	Munya	0	25	0	1	0	45	28	240	Strong negative impact
	Paikoro	0	30	0	0	0	48	22	877	Strong negative impact
	Rafi	0	80	0	1	0	5	13	767	Medium negative impact
	Rijau	0	89	0	0	0	0	11	596	Medium negative impact
	Shiroro	0	38	0	3	0	36	23	307	Strong negative impact
	Wushishi	0	47	0	0	0	31	22	147	Strong negative impact
Sokoto		0	**29**	0	**2**	0	**30**	**39**	**4,225**	
Sokoto	Gada	0	12	0	1	0	55	31	749	Strong negative impact
	Goronyo	0	43	0	5	0	19	33	328	Strong negative impact
	Gudu	0	45	0	2	0	20	34	410	Strong negative impact
	Illela	0	49	0	5	0	23	23	441	Strong negative impact
	Isa	0	8	0	1	0	18	73	437	Strong negative impact
	Rabah	0	7	0	0	0	75	17	388	Strong negative impact
	Sabon Birni	0	38	0	2	0	21	39	703	Strong negative impact
	Silame	0	19	0	0	0	13	68	297	Strong negative impact
	Tangaza	0	39	0	1	0	13	47	472	Strong negative impact
Yobe		0	**32**	0	**1**	0	**35**	**32**	**3,605**	
Yobe	Bursari	0	16	0	0	0	31	53	535	Strong negative impact
	Geidam	0	2	0	0	0	63	35	1,114	Strong negative impact
	Gujba	0	84	0	1	0	1	13	497	Medium negative impact
	Gulani	0	93	0	1	0	0	6	369	Slight negative impact
	Tarmuwa	0	41	0	0	0	29	30	441	Strong negative impact
	Yunusari	0	16	0	2	0	41	40	649	Strong negative impact
Zamfara		0	**12**	0	**29**	0	**34**	**25**	**10,255**	
Zamfara	Anka	0	18	0	60	0	0	22	492	Strong negative impact
	Bakura	0	27	0	9	0	27	37	489	Strong negative impact
	Birnin Magaji-Kiyaw	0	0	0	0	0	93	7	351	Strong negative impact
	Bukkuyum	0	32	0	55	0	1	13	837	Medium negative impact
	Bungudu	0	1	0	12	0	64	22	1,239	Strong negative impact
	Gummi	0	79	0	11	0	3	7	585	Medium negative impact
	Gusau	0	2	0	25	0	29	44	1,051	Strong negative impact
	Kaura Namoda	0	0	0	0	0	95	5	725	Strong negative impact
	Maradun	0	11	0	23	0	22	44	659	Strong negative impact
	Maru	0	12	0	42	0	14	33	1,098	Strong negative impact
	Shinkafi	0	3	0	2	0	71	24	399	Strong negative impact
	Talata Mafara	0	3	0	56	0	5	36	1,059	Strong negative impact
	Tsafe	0	4	0	72	0	3	21	646	Strong negative impact
	Zurmi	0	0	0	0	0	90	10	625	Strong negative impact
Grand Total		0	**32**	0	**7**	0	**37**	**24**	**63,187**	

The following table shows the detailed cropland results in comparison to reference year and the preliminary recommendations for CH to be considered as indicative.

State	LGA	Percentage of Significant increase	Percentage of Medium increase	Percentage of slight increase	Percentage of No change	Percentage of slight decrease	Percentage of Medium decrease	Percentage of Significant decrease	total analysed localities	Impacts of long-term positive and negative changes (2022 vs pre-crisis) on the Availability dimension
Adamawa		**0**	**0**	**0**	**1**	**0**	**96**	**3**	**1,395**	
Adamawa	Hong	0	0	0	1	0	94	5	543	Strong negative impact
	Madagali	0	0	0	2	0	93	5	325	Strong negative impact
	Michika	0	0	0	0	0	100	0	527	Strong negative impact
Borno		**0**	**5**	**0**	**3**	**0**	**87**	**5**	**16,589**	
Borno	Abadam	0	37	0	0	0	52	11	431	Strong negative impact
	Askira Uba	0	0	0	0	0	100	0	587	Strong negative impact
	Bama	0	0	0	4	0	95	1	809	Strong negative impact
	Biu	0	0	0	0	0	100	0	973	Strong negative impact
	Chibok	0	0	0	0	0	99	1	330	Strong negative impact
	Damboa	0	0	0	3	0	77	20	566	Strong negative impact
	Dikwa	0	0	0	0	0	100	0	208	Strong negative impact
	Gubio	0	1	0	0	0	98	1	1,857	Strong negative impact
	Guzamala	0	3	0	7	0	87	4	1,245	Strong negative impact
	Gwoza	0	0	0	29	0	52	19	865	Strong negative impact
	Kaga	0	16	0	0	0	79	6	852	Strong negative impact
	Kala Balge	0	0	0	4	0	89	6	299	Strong negative impact
	Konduga	0	8	0	0	0	88	4	1,254	Strong negative impact
	Kukawa	0	3	0	1	0	91	5	606	Strong negative impact
	Mafa	0	0	0	0	0	100	0	488	Strong negative impact
	Magumeri	0	11	0	1	0	80	8	1,784	Strong negative impact
	Marte	0	0	0	5	0	91	4	221	Strong negative impact
	Mobbar	0	4	0	0	0	92	4	1,403	Strong negative impact
	Monguno	0	0	0	1	0	99	0	380	Strong negative impact
	Ngala	0	16	0	4	0	43	37	279	Strong negative impact
	Nganzai	0	0	0	0	0	99	1	1,152	Strong negative impact
Kaduna		**0**	**12**	**0**	**0**	**0**	**82**	**6**	**9,666**	
Kaduna	Birnin Gwari	0	0	0	1	0	92	7	1,480	Strong negative impact
	Chikun	0	43	0	0	0	45	12	2,340	Medium negative impact
	Giwa	0	1	0	0	0	93	7	1,241	Strong negative impact
	Ikara	0	0	0	0	0	100	0	989	Strong negative impact
	Kachia	0	2	0	1	0	90	6	1,131	Strong negative impact
	Kajuru	0	8	0	0	0	89	4	600	Strong negative impact
	Kaura	0	5	0	0	0	93	2	923	Strong negative impact
	Zangon Kataf	0	1	0	1	0	95	3	962	Strong negative impact
Katsina		**0**	**0**	**0**	**0**	**0**	**97**	**3**	**10,726**	
Katsina	Bakori	0	0	0	0	0	96	4	928	Strong negative impact
	Batagarawa	0	0	0	0	0	100	0	340	Strong negative impact
	Batsari	0	0	0	0	0	100	0	559	Strong negative impact
	Charanchi	0	0	0	0	0	100	0	371	Strong negative impact
	Dan Musa	0	0	0	0	0	97	3	364	Strong negative impact
	Danja	0	0	0	0	0	100	0	549	Strong negative impact
	Dutsin Ma	0	0	0	0	0	100	0	484	Strong negative impact
	Faskari	0	0	0	0	0	93	7	706	Strong negative impact
	Funtua	0	0	0	3	0	91	6	966	Strong negative impact
	Ingawa	0	0	0	0	0	100	0	391	Strong negative impact
	Jibia	0	0	0	0	0	100	0	436	Strong negative impact
	Kafur	0	0	0	0	0	100	0	603	Strong negative impact
	Kankara	0	0	0	0	0	100	0	714	Strong negative impact
	Kankia	0	0	0	0	0	100	0	588	Strong negative impact
	Kurfi	0	0	0	0	0	100	0	358	Strong negative impact
	Malumfashi	0	0	0	0	0	100	0	500	Strong negative impact
	Matazu	0	0	0	0	0	100	0	329	Strong negative impact
	Musawa	0	0	0	0	0	100	0	491	Strong negative impact
	Sabuwa	0	0	0	0	0	82	18	661	Strong negative impact
	Safana	0	0	0	0	0	99	1	388	Strong negative impact
Niger		**0**	**6**	**0**	**1**	**0**	**82**	**12**	**6,537**	
Niger	Bosso	0	2	0	0	0	93	5	175	Strong negative impact
	Gbako	0	2	0	0	0	78	20	407	Strong negative impact
	Kontagora	0	0	0	0	0	94	6	204	Strong negative impact
	Lapai	0	3	0	2	0	85	10	639	Strong negative impact
	Lavun	0	2	0	1	0	88	8	231	Strong negative impact
	Magama	0	20	0	2	0	63	15	226	Strong negative impact
	Mariga	0	3	0	3	0	70	24	1,279	Strong negative impact
	Mashegu	0	26	0	0	0	64	10	246	Strong negative impact
	Mokwa	0	13	0	8	0	68	11	196	Strong negative impact
	Munya	0	16	0	0	0	70	14	240	Strong negative impact

State	LGA	Percentage of Significant increase	Percentage of Medium increase	Percentage of slight increase	Percentage of No change	Percentage of slight decrease	Percentage of Medium decrease	Percentage of Significant decrease	total analysed localities	Impacts of long-term positive and negative changes (2022 vs pre-crisis) on the Availability dimension
	Paikoro	0	4	0	0	0	94	3	877	Strong negative impact
	Rafi	0	0	0	0	0	100	0	767	Strong negative impact
	Rijau	0	1	0	1	0	81	17	596	Strong negative impact
	Shiroro	0	25	0	0	0	69	6	307	Strong negative impact
	Wushishi	0	0	0	0	0	98	2	147	Strong negative impact
Sokoto		**0**	**5**	**0**	**5**	**0**	**67**	**22**	**4,225**	
Sokoto	Gada	0	0	0	9	0	56	35	749	Strong negative impact
	Goronyo	0	5	0	8	0	42	45	328	Strong negative impact
	Gudu	0	13	0	0	0	40	47	410	Strong negative impact
	Illela	0	11	0	24	0	54	12	441	Strong negative impact
	Isa	0	0	0	0	0	100	0	437	Strong negative impact
	Rabah	0	1	0	1	0	96	2	388	Strong negative impact
	Sabon Birni	0	0	0	2	0	89	8	703	Strong negative impact
	Silame	0	0	0	0	0	95	5	297	Strong negative impact
	Tangaza	0	20	0	1	0	35	44	472	Strong negative impact
Yobe		**0**	**6**	**0**	**1**	**0**	**89**	**5**	**3,605**	
Yobe	Bursari	0	0	0	0	0	96	4	535	Strong negative impact
	Geidam	0	7	0	2	0	86	5	1,114	Strong negative impact
	Gujba	0	1	0	0	0	98	1	497	Strong negative impact
	Gulani	0	0	0	2	0	96	3	369	Strong negative impact
	Tarmuwa	0	10	0	0	0	84	6	441	Strong negative impact
	Yunusari	0	12	0	0	0	81	7	649	Strong negative impact
Zamfara		**0**	**0**	**0**	**1**	**0**	**94**	**5**	**10,255**	
Zamfara	Anka	0	0	0	6	0	91	3	492	Strong negative impact
	Bakura	0	0	0	0	0	100	0	489	Strong negative impact
	Birnin Magaji-Kiyaw	0	0	0	0	0	100	0	351	Strong negative impact
	Bukkuyum	0	0	0	1	0	80	19	837	Strong negative impact
	Bungudu	0	0	0	0	0	99	1	1,239	Strong negative impact
	Gummi	0	0	0	4	0	91	4	585	Strong negative impact
	Gusau	0	0	0	2	0	93	5	1,051	Strong negative impact
	Kaura Namoda	0	0	0	0	0	100	0	725	Strong negative impact
	Maradun	0	0	0	5	0	84	11	659	Strong negative impact
	Maru	0	1	0	1	0	94	4	1,098	Strong negative impact
	Shinkafi	0	0	0	0	0	100	0	399	Strong negative impact
	Talata Mafara	0	0	0	0	0	96	4	1,059	Strong negative impact
	Tsafe	0	0	0	0	0	85	14	646	Strong negative impact
	Zurmi	0	0	0	0	0	100	0	625	Strong negative impact
Grand Total		**0**	**4**	**0**	**2**	**0**	**87**	**7**	**62,998**	

How was this analysis used in Nigeria?

The analysis results are used as evidence-base to support humanitarian and food security related activities in Nigeria. The results were used to inform the Cadre Harmonisé (CH) analysis, particularly for the 'Availability' and 'Hazards & Vulnerability' components. This supported providing a comprehensive view of the food security situation in the analysed areas.

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Regional Bureau for Western Africa

World Food Programme

10 Avenue Pasteur, B.P. 6288 Dakar Etoile, 11524 Dakar, Senegal

For more information, please contact Research, Assessment and Monitoring Unit (rbd.ram@wfp.org); or Nigeria Country Office, Serena Mithbaokar, (serena.mithbaokar@wfp.org).

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